RAMAIAH Institute of Technology

Department of Computer Science & Engineering

QUESTION BANK FOR IV SEMESTER (Term: Jan-May 2018)

UNIX and Python Scripting (CSL46-1)

I.A. Marks: 50 **Exam Hours: 03**
Credits: 0:1:2:0 **Exam Marks: 50**

Develop the following programs using Python

1.	a) Write a python program to implement the following : Given an array of length 3, return an array with the elements "rotated left" so that {1, 2, 3} yields {2, 3, 1}. b) Write a python function stats() that takes name of text file as an argument. The function should print the number of lines, words, and characters in the file. For example, >>>stats('example.txt') Line count: 3 Word count: 20 Character count: 98
2.	a) Write a python program to implement the following. Vehicle ___|___ | | Bike Car ___|___ | | Pedal bikes Motor bikes b) Write a python function censor() that takes the name of a file as an argument. The function should replace every occurrence of a four-letter word in the file with string 'xxxx' and then write it into file 'censored.txt'.
3.	(a) Create a python dictionary for phones and their prices. Write functions to a. Add a new entry (phone:price) b. Search for a particular phone and retrieve it's price c. Find phones with same price d. Remove an entry. e. Display all phones sorted according to price. [Program must be menu driven] (b) Write a python program to design a class 'Account' that stores the current balance, interest rate and account number of a bank account. Your class should provide methods to withdraw deposit and add interest to the account. The user should only be allowed to withdraw money up to some overdraft limit. If an account goes overdrawn, there is fee charged.
4.	(a) Write an interactive python program having a function called Initials() that takes input representing a full name and returns the initials of the name in all capital letters. For example If Input: Robert B. Qwerty then Output : RBQ

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	(b) Write a python program to implement a class called Adder that exports a method add(self, x, y) that prints a "Not Implemented" message. Then define two subclasses of Adder that implement the add method: 1. ListAdder, with an add method that returns the concatenation of its two list arguments 2. DictAdder, with an add method that returns a new dictionary with the items in both its two dictionary arguments. 3. Overload the + operator
5.	(a) Write a python function vowelCount() that takes a string as input and counts number of occurrences of each vowels in the string. For. Eg. >>>vowelCount('Le Tour de France') a, e, i, o, and u appear, respectively, 1, 3, 0, 1, 1 times (b) Write a python program to Create a class, Triangle. Its __init__() method should take self, angle1, angle2, and angle3 as arguments. Create a variable named number_of_sides and set it equal to 3.Create a method named check_angles. The sum of a triangle's three angles is It should return True if the sum of self.angle1, self.angle2, and self.angle3 is equal 180, and False otherwise. Print out my_triangle.number_of_sides and print out my_triangle.check_angles().
6.	(a) Write a python program to read lines of input from the user, without giving a prompt. When the input line is quit, stop accepting input. As output, print the input lines in reverse order, one on each output line. The line quit should not be included in the output. Do not use the Python list reverse method. Sample input and outputs are Input : hello world cse 326 32.545 ostrich quit Output: ostrich 32.545 326 cse hello world (b) Write a python program to calculate the area of the circle and catch appropriate user defined exception.(Hint: check for invalid radius)
7.	a) Write a python program to create package 'Sample 'with 2 modules called stack and main, the stack module should have the following functions 1) Getstack()- to return an empty stack 2) Isempty()- to return true if stack is empty 3) Top() – to return the index of stack top 4) Push()- To push elements into a stack 5) Pop()- to return top of stack element if stack is not empty 6) The main module should use functions of the stack module to push and pop elements. b) Write a Python program to read the marks for three subjects from the command line. If the CIE marks are less than 20, the exception 'MarksNotElligible' is thrown. If the given mark is not a valid integer then exception must be handled.
8.	(a) Write a python function called is_abecedarian that returns True if the letters in a word appear in alphabetical order (double letters are ok). How many abecedarian words are there? (b) Create a python class called MyQueue which supports INSERT, DELETE and DISPLAY operations. i) Implement the Queue class using a list. Specify the upper bound of the size while creating the queue object ii) Provide exception handling mechanism to check bound conditions such as Queue is full and Queue is Empty.
9.	(a) Write a python function which takes the numbers using variable number of arguments and sort the numbers using bubble sort method.

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	(b) Write a python class called student with USN, Name and Subject registered as data members. Display students who have registered for PYTHON and count number of students in the class (Note: Use Data and Class Attribute)
10.	(a) Write a python program to create package 'Mystring 'with 3 modules called Palindrome and CountVowel. Write a client code (Menu Driven) which imports package Mystring, reads the input from the user and invoke appropriate functions. (b) Write a python program to execute the following lines code by catching appropriate exception without runtime errors. 1) print (1+'msrit') 2) L = [1,2,3] print(L[4])
11.	(a) Create a dictionary for words and their meanings. Write functions to add a new entry (word:meaning) ,search for a particular word and retrieve meaning, given meaning find words with same meaning , remove an entry, display all words sorted alphabetically. [Program must be menu driven] (b) Write a function subsetSum() that takes as input a list of positive numbers and a positive number target. Your function should return True if there are three numbers in the list that add up to target. For example, if the input list is [5, 4, 10, 20, 15, 19] and target is 38, then True should be returned since 4+15+19 = 38. However, if the input list is the same but the target value is 10, then the returned value should be False because 10 is not the sum of any three numbers in the given list.

12.	(a) Create a class to represent city which contains a list of places to see. Provide methods to create the object with just the city name or with city name and places (stored as list) Provide methods to add a place of visit, to remove place of visit, to display all places of visit.
	
	(b) Implement function partition() that splits a list of soccer players into two groups. More precisely, it takes a list of first names (strings) as input and prints the names of those soccer players whose first name starts with a letter between and including A and M.
	>>> partition(['Eleanor', 'Evelyn', 'Sammy', 'Owen', 'Gavin'])
	Eleanor
	Evelyn
	Gavin
	>>> partition(['Xena', 'Sammy', 'Owen'])

Note:

UNIX quiz	**: 20 Marks**
Python: Conduction and Result	**: 30 Marks (a: 15 Marks, b: 15 Marks)**
For Change of question	**: -06 Marks**

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